

The Role of Public Health in Preventing Chronic Diseases

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ABSTRACT

Chronic diseases, including heart disease, cancer, and diabetes, are the main causes of death and disability worldwide. Public health plays an important role in avoiding these illnesses through population-based interventions. This study investigates public health approaches to chronic illness prevention, including both primary and secondary preventative measures. Community-level interventions, health promotion programs, and policy lobbying are all emphasized. These initiatives try to target lifestyle risk factors as well as environmental impacts, emphasizing the importance of multisectoral efforts in reducing the burden of chronic diseases and improving public health outcomes.

Keywords: Public health, chronic diseases, prevention, health promotion, epidemiology, community interventions

INTRODUCTION

Chronic diseases account for 70% of all deaths and 50% of disability in the United States. Public health is not only concerned with the health of the members of society but also addresses both individual and societal safety. Public health experts are also trained in disease intervention, disease control, and health promotion. Public health issues are not just in the hands of health departments but are being dealt with in all local and national government sectors. Chronic diseases are multifactorial, so as part of a national program to reduce overall health risk, there are many sectors involved in chronic disease prevention [1, 2]. Chronic diseases have been defined as conditions that last a year or more, require ongoing medical attention, and/or limit activities of daily living. Some examples of this include but are not limited to cancer, diabetes, kidney, and heart disease. These differ from acute conditions, which generally occur suddenly and can be short-term. A conceptual framework to describe the relationship, or overlap, between chronic disease prevention and management was used to help define public health's role in chronic disease. Public health is about taking a preventive and proactive approach rather than being reactive. All of the primary functions of public health fit together in multiple venues and settings for Americans from the time they are born until they die. While public health works to improve the health of the entire nation, how public health problems are addressed must be broad and multisectoral and call upon every segment of society as such [3, 4].

Epidemiology Of Chronic Diseases and Risk Factors

Chronic diseases are long-lasting, need ongoing care, and their course is harder to predict and treat than acute illnesses. They lead to reduced quality of life, increase risks for many conditions, and contribute to the development of some types of fatal diseases. They are also often preventable with lifestyle changes and interventions. They make public health efforts harder, as prevention can stop some low-risk people and some high-risk people from developing them. For chronic diseases, the determinants are multi-level. Many of the most important risk factors are social, behavioral, and environmental, which are all linked to the place the population is in and the choices they have available. However, chronic diseases and the effects they have vary between the people in the population, both between different community populations and within them. This is what makes prevention and intervention programs for these disorders so difficult [5, 6]. Over the past 100 years, there have been important changes in the leading categories of fatal diseases. In 2008, the ten leading conditions that caused death in the USA were heart disease, cancer, cerebrovascular diseases, chronic lower respiratory diseases, unintentional injuries, influenza and related diseases, and diabetes mellitus. Currently, 45% of people in the developed world have at least one chronic disease, such as congenital heart disease, obesity, depression, or chronic cancer.

Four chronic, non-communicable conditions (heart disease, stroke, cancer, and diabetes) were responsible for two-thirds of the 58 million global deaths in 2005. The frequency and causal weakness of the condition show that it is likely four chronic conditions run in a chronological, changing fashion over the same 20-year, 40-year, and 60-year lifetime [7, 8].

Public Health Strategies for Preventing Chronic Diseases

The focus of public health is the health of populations and communities. Public health is the science of protecting and improving the health of people and their communities. Preventing chronic diseases is a central focus of public health. Public health professionals have developed several evidence-based interventions that effectively reduce the burden of chronic diseases in defined populations. In public health, interventions are primary if their purpose is preventing the disease or condition from occurring, and are secondary if their purpose is to detect the problem in its early stages and reduce harm, rather than preventing it altogether [9, 10]. Strategies for primary prevention of chronic diseases include the promotion of healthy lifestyles and behaviors, community assessment, health promotion, engagement with the public, and establishment of partnerships. Specific actions include programs to support exercise and physical activity, promote healthier foods, promote community organization, develop partnerships with other organizations and agencies, and promote greater active transportation. Strategies for secondary prevention of chronic diseases include early detection and early management of chronic conditions. Screening for a limited range of chronic conditions is an example, as are programs that provide resources to chronic disease sufferers who need help and support. Essential to planning, implementing, evaluating, and improving these plans are comprehensive data systems and epidemiological research to build practical knowledge. Interdisciplinary work among public health and other agencies, practitioners, and planners is a necessary precursor to meaningful action [11, 12]. While it needs more empirical support, over time one strategy has gained increasing acceptance: a shift from primary and secondary care to primary prevention through changes aimed directly at shaping healthy community environments. This approach may include education and lifestyle incentives, but it goes beyond individual change by valuing common goods, and healthy environments, and reducing susceptibility for some individual's communities react in unison to change. Preventive techniques that target whole populations directly engage community attention, change social norms, and promote healthier communities, both of which are necessary to increase susceptibility. Preventive services and primary care focus on 'breaking the chain' of susceptibility progression before and after diagnosis. Combining costs of medical visits, patient time, and lost productivity due to hospital stays and premature death, a study estimated that chronic diseases accounted for roughly 70% of overall healthcare costs. Public health prevention, requiring individual and shared action, therefore has the potential to be a key tool in reducing chronic disease, improving quality of life, and mitigating healthcare costs [13, 14].

Community Interventions and Health Promotion Programs

Community-level interventions and health promotion programs are designed to promote health, prevent disease, and address root contributors to death and disability in populations. Many public health agencies and community organizations have successfully implemented interventions that raise public awareness and inform health-related decisions in a variety of community venues, from worksites to schools. Many aim to encourage individuals to engage in healthier behaviors. Successful interventions are either tailored to the unique characteristics of a community or incorporate core features of successful programs proven to be effective in many settings. The importance of community-based strategies is that they can address the cultural values and interests of different populations and include interventions delivered by opinion leaders and peers within community settings. Interventions that are effective in reducing chronic diseases have three central features. First, they have been tailored to the unique characteristics of the communities in which they were implemented. Just as no two communities are the same, no two programs will be the same once they account for local people, settings, and environments. Second, the programs include efforts to build partnerships between local public health and many other facets of the community, including worksites, schools, religious organizations, local government, and many more. Lastly, at their core, these interventions are designed to raise the level of community awareness or educate individuals about something that can improve their lives. Education and outreach to all community members serve not only to teach people new skills but also to raise awareness and social support for the changes that will ultimately make a healthier community. Community programs are essential for long-term changes in chronic disease rates, such as heart disease, diabetes, and cancer. Many community-based programs rely on education and outreach to individual community members. But it is what happens behind the scenes when physical activity volunteers, school cafeteria staff, city planners, and opinion leaders begin to advocate for changes in policy, work environments, and community activities. Local leaders work to make the healthy choice the easy choice with policies and regulations that support healthier behaviors, thus

affecting behavior change on a broader level. Finally, it is not the use of professional health educators per se, but the use of peers and opinion leaders that has allowed these programs to develop and continue to spread through their communities. Public health is simply providing the opportunity for these organic actions and modeling to occur – and working with constituent groups to provide education and capacity-building opportunities to make community-led efforts in this arena even more successful [8, 15].

Policy And Advocacy in Public Health for Chronic Disease Prevention

Policies create the context where individuals and communities can make healthy choices more easily by building healthy environments. Regulation limiting tobacco use in public places, for example, creates a supportive environment that decreases an individual's likelihood of being exposed to secondhand smoke. Other policy approaches to prevent non-communicable diseases (NCDs) include creating incentives to eat healthily and be more active, regulation of food labeling, and promoting workplace wellness programs and physical activity opportunities. Several strategies may contribute to enhancements in public health policy, including the use of standards, awareness and motivation factors, intersectoral action, and tailoring to specific factors such as the setting and the intent of the policies. One common type of policy advocacy involves influencing governmental bodies, local school boards, state legislatures, and the U.S. Congress to enact or change policies. Another involves working with nonprofit organizations, youth clubs, and other community members to secure more resources for chronic disease programs and services. These kinds of policy and advocacy approaches are often connected to efforts to increase public and political will to act on a problem [16, 17]. Many success stories have been reported, illustrating that public health students and professionals can make a difference on both the national and local levels. Over time, communities, states, and the federal government have adopted useful policy goals and objectives to prevent NCDs. Generating action requires a decision-making response by leadership at the top, an approach that acknowledges: "Power and privilege relate to the real world, even if they can also be used in a much more harmful manner." Policy spaces can be at the local, state, or national level and can involve stakeholders from numerous systems, such as city planning, transportation, and education. The content and process of this policy can revolve around various ideas that different stakeholders bring to the table. A new policy can also introduce new ideas. Public health practice and policy exist in a political environment. It has been suggested that: "Schools of public health should be pragmatic. The contexts we work in should call for an approach that is task-centered." Public health should seek to achieve the possible. If what is possible is acceptable and has consequences that can be evaluated as useful or of no further use, then public health has probably contributed to a worthwhile "progressive vision." Policymakers at the political level and the level of practice or professionalism may or may not share this vision; they do not need to. Sharing a common praxis is more important [18, 19]. Public health practice is most likely to be successful when policies are enacted that help prevent illness, injury, dysfunction, and suffering. In other words, the most powerful influences are not imported but inform action. There are limitations to advocacy for policy change occurring post hoc, that is after agendas are formed and plans are put in place. When public health students and professionals advocate to modify practices first and assess results, policy change is more likely to occur (or be reinforced) when available data call attention to an area in need of concern; it is rare for policymakers to act without data, however mediocre its quality. Historically, this transtheoretical, multimodal approach has been much more impactful than a one-track recommendation to influence policies [20, 21].

CONCLUSION

Public health plays an important role in the prevention and management of chronic diseases by implementing evidence-based interventions such as early detection, lifestyle change, and community participation. Public health experts can considerably lower the burden of chronic diseases by targeting important risk factors and pushing for policies that support healthy environments. Integrating interdisciplinary approaches, collaborations, and personalized community interventions is crucial for achieving effective and long-term public health programs. Policy advocacy, particularly in the creation of supportive settings, reinforces these efforts by making chronic illness prevention a shared duty across sectors and communities.

REFERENCES

1. Holman HR. The relation of the chronic disease epidemic to the health care crisis. *ACR open rheumatology*. 2020 Mar;2(3):167-73.
2. Tam T. Aging and chronic diseases: a profile of Canadian seniors. Government of Canada. 2020.
3. Hacker KA, Briss PA, Richardson L, Wright J, Petersen R. Peer reviewed: COVID-19 and chronic disease: the impact now and in the future. *Preventing chronic disease*. 2021;18.

4. Wu J, Liu J, Li S, Ma H, Wang Y. Trends in the prevalence and disability-adjusted life years of eating disorders from 1990 to 2017: results from the Global Burden of Disease Study 2017. *Epidemiology and psychiatric sciences*. 2020 Jan;29:e191.
5. Ornish D, Ornish A. *Undo it!: How simple lifestyle changes can reverse most chronic diseases*. Ballantine Books; 2022 Jan 4.
6. Mazzucca S, Arredondo EM, Hoelscher DM, Haire-Joshu D, Tabak RG, Kumanyika SK, Brownson RC. Expanding implementation research to prevent chronic diseases in community settings. *Annual review of public health*. 2021 Apr 1;42(1):135-58. annualreviews.org
7. Malik VS, Hu FB. The role of sugar-sweetened beverages in the global epidemics of obesity and chronic diseases. *Nature Reviews Endocrinology*. 2022 Apr;18(4):205-18.
8. Higgins V, Sohaei D, Diamandis EP, Prassas I. COVID-19: from an acute to chronic disease? Potential long-term health consequences. *Critical reviews in clinical laboratory sciences*. 2021 Jul 4;58(5):297-310. [\[HTML\]](#)
9. Vijay A, Valdes AM. Role of the gut microbiome in chronic diseases: a narrative review. *European journal of clinical nutrition*. 2022;76(4):489.
10. Lazarus JV, Mark HE, Anstee QM, Arab JP, Batterham RL, Castera L, Cortez-Pinto H, Crespo J, Cusi K, Dirac MA, Francque S. Advancing the global public health agenda for NAFLD: a consensus statement. *Nature Reviews Gastroenterology & Hepatology*. 2022 Jan;19(1):60-78. nature.com
11. von Mutius E, Smits HH. Primary prevention of asthma: from risk and protective factors to targeted strategies for prevention. *The Lancet*. 2020 Sep 19;396(10254):854-66.
12. Edelman C, Kudzma EC. *Health promotion throughout the life span-e-book*. Elsevier Health Sciences; 2021 Nov 12.
13. Bardhan I, Chen H, Karahanna E. Connecting systems, data, and people: A multidisciplinary research roadmap for chronic disease management. *MIS Quarterly*. 2020 Mar 1;44(1).
14. Peery AF, Crockett SD, Murphy CC, Jensen ET, Kim HP, Egberg MD, Lund JL, Moon AM, Pate V, Barnes EL, Schlusser CL. Burden and cost of gastrointestinal, liver, and pancreatic diseases in the United States: update 2021. *Gastroenterology*. 2022 Feb 1;162(2):621-44. gastrojournal.org
15. Yamada M, Arai H. Long-term care system in Japan. *Annals of geriatric medicine and research*. 2020 Sep;24(3):174.
16. Wang Y, Zhao L, Gao L, Pan A, Xue H. Health policy and public health implications of obesity in China. *The lancet Diabetes & endocrinology*. 2021 Jul 1;9(7):446-61. [\[HTML\]](#)
17. Brownson RC, Kumanyika SK, Kreuter MW, Haire-Joshu D. Implementation science should give higher priority to health equity. *Implementation Science*. 2021 Dec;16:1-6. springer.com
18. Thakur JS, Paika R, Singh S. Burden of noncommunicable diseases and implementation challenges of National NCD Programmes in India. *medical journal armed forces india*. 2020 Jul 1;76(3):261-7.
19. Gómez EJ, Méndez CA. Institutions, policy, and non-communicable diseases (NCDs) in Latin America. *Journal of Politics in Latin America*. 2021 Apr;13(1):114-37.
20. Buse K, Mays N, Colombini M, Fraser A, Khan M, Walls H. *Making Health Policy*, 3e. McGraw Hill; 2023 Sep 8.
21. Woolhandler S, Himmelstein DU, Ahmed S, Bailey Z, Bassett MT, Bird M, Bor J, Bor D, Carrasquillo O, Chowkwanyun M, Dickman SL. Public policy and health in the Trump era. *The Lancet*. 2021 Feb 20;397(10275):705-53. landofsixpeoples.com